

IN THE CLAIMS:

Please cancel Claims 17 - 38, without prejudice, and amend Claim 1 as follows, set forth in the new amendment format:

1. (Currently Amended) An exhaust gas catalyst system, comprising:
a substrate; and
a nitrogen oxide adsorber disposed on said substrate, the nitrogen oxides adsorber comprising:

a porous support; and

~~at least one alkali metal barrier; and~~

a material loaded on said porous support comprising:

a NO_x oxidation catalyst; and

~~at least one~~ alkali material; and

an alkali metal barrier disposed between the substrate and the nitrogen oxide adsorber.

2. (Original) The exhaust gas catalyst system of Claim 1, wherein said porous support comprises alumina, gamma-alumina, delta-alumina, theta-alumina, zeolite, zirconia, ceria, magnesium oxide, titania, silica, or mixtures comprising at least one of the foregoing.

3. (Original) The exhaust gas catalyst system of Claim 1, wherein said NO_x oxidation catalyst is platinum, palladium, rhodium, or mixtures comprising at least one of the foregoing.

4. (Original) The exhaust gas catalyst system of Claim 1, wherein the alkali material is sodium, potassium, cesium, lithium, rubidium, or mixtures comprising at least one of the foregoing.

5. (Original) The exhaust gas catalyst system of Claim 1, wherein the alkali metal barrier is a material containing an early transition metal oxide.

6. (Original) The exhaust gas catalyst system of Claim 5, wherein the alkali metal barrier is a material selected from the group consisting of zirconia, titania, ferric oxide, cordierite, ~~alpha-alumina~~, ~~mullite~~, ~~lin oxide~~, ceria, manganese oxide, ~~silica~~, vanadium oxide, chromium oxide, hafnium oxide, molybdenum oxide, tungsten oxide, and mixtures comprising at least one of these materials. fail

7. (Original) The exhaust gas catalyst system of Claim 1, wherein the alkali metal barrier is present in an amount sufficient to substantially inhibit the migration of alkali material out of said nitrogen oxides adsorber.

8. (Original) The exhaust gas catalyst system of Claim 7, wherein the alkali metal barrier is loaded on said porous support and present in an amount of up to about 2 g/in³.

9. (Original) The exhaust gas catalyst system of Claim 8, wherein the alkali metal barrier is present in an amount up to about 0.35 g/in³.

10. (Original) The exhaust gas catalyst system of Claim 9, wherein the alkali metal barrier is present in an amount up to about 0.25 g/in³.

11. (Original) The exhaust gas catalyst system of Claim 10, wherein the alkali metal barrier is present in an amount of about 0.05 g/in³ to about 0.20 g/in³.

(12. (Original) The exhaust gas catalyst system of Claim 7, wherein the alkali metal barrier is a layer disposed between said substrate and said porous support. fail)

13. (Original) The exhaust gas catalyst system of Claim 12, wherein said layer comprises an atomic film.

14. (Original) The exhaust gas catalyst system of Claim 12, wherein said layer has a thickness of up to about 100 μ.

15. (Original) The exhaust gas catalyst system of Claim 12, further comprising additional alkali metal barrier mixed with said material.

16. (Original) The exhaust gas catalyst system of Claim 1, further comprising a three-way catalyst component, positioned downstream of the nitrogen oxides adsorber or part of the nitrogen oxides adsorber.

17 - 38 (cancelled)